| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/928,754 | 08/13/2001 | Ralph C. Taylor | 00100010064 | 8666 |

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VEDDER PRICE KAUFMAN & KAMMHOLZ
222 N. LASALLE STREET
CHICAGO, IL 60601

| EXAMINER |
|---|
| NGUYEN, HAU H |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2676 | |

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08/13/01* .

2a)☐ This action is **FINAL.**    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

2.      Claims 1-5, 7-16, and 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by

Duluk et al. (U.S. Patent No. 6,525,737).

        Referring to claims 1-5, 7-10, 13-16, 18, and 19, Duluk et al. teach a polygon memory

(residing in a graphics processor), which, as shown in Fig. 12, receives and stores two types of

information: one for vertex information V2; and one for state information S3 (col. 14, lines 43-

45) (state data). V2, as defined, is per-vertex state information that includes texture coordinates,

the vertex location in eye coordinates, surface normals, and vertex colors and shading parameters

(col. 8, lines 15-21) (primitives processing), and S3 is the state information S3 to be constant for

all the vertices in a polygon mesh (or, line strips, triangle strips, etc.) (col. 12, lines 62-65).

Duluk et al. further teach polygon memory will overflow if a single user frame contains too

much information.  The overflow point depends on the size of Polygon Memory; the frequency

of state information S3 changes in the frame; the way the state is encapsulated and represented;

and the primitive features used (which determines the amount of vertex information V2 is needed

per vertex).  When memory fills up, all primitives are flushed down the pipe and the user frame

finished with another fill of the Polygon Memory buffer (col. 18, lines 66-67, and col. 19, lines

1-9), thus, prohibiting additional set of state data. With reference to Fig. 5A, Duluk et al. teach in

one embodiment, the Polygon Memory, like Sort Memory, is double buffered. Thus MEX

(mode extraction) will be writing to one buffer, while MIJ (mode injection) is reading from the

other. This situation causes a delay in processing of frames, since MEX needs to wait for MIJ to

be done with the frame before it can move on to the next (third) frame (col. 19, lines 20-26).

In regard to claim 11, Duluk et al. teach a method of minimizing or avoiding overflow by

having software get an estimate of the scene size, and break the frame in two or more roughly

equally complex frames (col. 19, lines 39-42).

Referring to claim 12, Duluk et al. teach the update of state data is performed by a

software driver residing a host memory (col. 15, lines 26-37).

### *Claim Rejections - 35 USC § 103*

3.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.      Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duluk et

al. (U.S. Patent No. 6,525,737).

Referring to claims 6 and 17, although Duluk et al. do not teach the polygon memory is a

ring buffer, Duluk et al. do teach the polygon memory is multi-buffered, meaning that there are

more than two frames available (col. 19, lines 46-48). Since ring buffer is admitted as prior art in

the application, it would have been obvious to one skilled in the art to combine the teachings of

Duluk et al. with admitted prior art so that new data cannot overwrite current data while being

processed.


## *Conclusion*

5.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hau H. Nguyen whose telephone number is: 703-305-4104.  The

examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella can be reached on 703-308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose

telephone number is (703) 306-0377.


H. Nguyen

09/17/2003
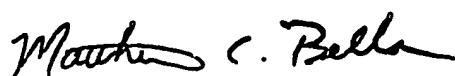
*Matthew C. Bella*

**MATTHEW C. BELLA**
**SUPERVISORY PATENT EXAMINER**
**TECHNOLOGY CENTER 2600**